

Scientific Note

Spider Prey of *Trypoxylon tridentatum* (Hymenoptera: Sphecidae) from Arizona and California

The solitary spider-hunting wasp, *Trypoxylon tridentatum* Packard, is the most widespread species of the subgenus *Trypargilum* in North America, occurring in southern British Columbia and Ontario in Canada, most of the United States, and in Mexico as far south as Chiapas (Coville, 1982, Univ. Calif. Publ. Entomol., 97:1–147). The species is polytypic but only the Floridian population has been considered distinct enough to be recognized as a subspecies, *archboldi* Krombein. Krombein (1967, Trap-nesting wasps and bees, Smithsonian Press, Washington, D.C., 570 pp.) gave prey records for *T. tridentatum* from North Carolina, Arizona, and Florida. Recently, O'Brien (1982, Pan-Pacific Entomol., 58:288–290) presented prey records from Oregon. In this paper I provide the first prey records from California along with additional prey records from Arizona and discuss the pattern of prey preferences demonstrated by different populations of the wasp. The spiders, obtained from trap-nests, were identified by H. W. Levi (Museum of Comparative Zoology, Harvard), W. J. Gertsch (Portal, Arizona), and C. Griswold (Dept. of Arachnology, Natal Museum, Pietermaritzburg, 3201 Natal, South Africa).

1. Prey from 2 nests at Madera Canyon, Santa Rita Mountains, Arizona, collected on September 29, 1974.

ARANEIDAE (10): 1 ♀ *Araneus apache* Levi (?); 9 imm. *Larinia directa* (Hentz).
MIMETIDAE (2): 2 ♀ *Mimetus* sp.

THERIDIIDAE (5): 3 imm. *Latrodectus hesperus* Chamberlain and Ivie; 1 ♀ *Theridion kawea* Levi; 1 ♀ *Theridion* sp. near *timpanogos* Levi.

2. Prey from 3 nests at Miller Canyon, Huachuca Mountains, Arizona, collected on September 27, 1974.

ARANEIDAE (19): 9 imm. *Araneus* sp.; 1 ♀ *Hyposinga singaeformis* (Scheffer); 7 imm. *Larinia directa* (Hentz); 2 ♀ *Metepeira grinelli* Coolidge.

THERIDIIDAE (47): 1 imm., 2 ♂, 9 ♀ *Euryopsis texana* Banks, 31 imm. *Latrodectus hesperus* Chamberlain and Ivie; 3 ♀ *Theridion kawea* Levi; 1 ♀ *Theridion neomexicanum* Banks.

SALTICIDAE (1): 1 imm. *Metaphidippus* sp.

3. Prey from 17 nests at the University of California Hopland Field Station, Hopland, Mendocino Co., California, collected on July 17 and 18, 1974.

ARANEIDAE (130): 17 imm., 1 ♀ *Araneus bispinosus* (Keyserling); 64 imm., 3 ♀ *Araniella displicata* (Hentz); 3 imm. *Argiope trifasciata* (Faskäl); 37 imm. *Eustala* sp.; 3 ♀ *Metepeira ventura* Chamberlain and Ivie; 2 imm. *Metepeira* sp.

DICTYNIDAE (6): 6 ♀ *Mallos pallidus* (Banks).

MIMETIDAE (3): 1 imm., 2 ♀ *Mimetus hesperus* Chamberlain.

THERIDIIDAE (210): 10 imm., 1 ♂ *Latrodectus hesperus* Chamberlain and Ivie;

10 imm. *Latrodectus* sp.; 2 ♀ *Theridion crispulum* Simon; 30 ♀ *Theridion lawrencei* Gertsch and Archer; 1 ♀ *Theridion melanurum* Hahn; 30 ♀ *Theridion michelbacheri* Levi; 80 ♀ *Theridion murarium* Emerton; 2 imm., 3 ♀ *Theridion positivum* Chamberlain; 1 imm., 40 ♀ *Theridion* sp.

4. Prey from 20 nests at Del Puerto Canyon, Stanislaus Co., California, collected during July and August 1974.

ARANEIDAE (372): 16 imm., 2 ♀ *Araneus bispinosus* (Keyserling); 33 imm., 1 ♂ *Argiope trifasciata* (Faskäl); 317 imm. *Eustala* sp.; 2 imm., 1 ♀ *Metepeira* sp.

DICTYNIDAE (9): 1 ♀ *Mallos pallidus* (Banks); 8 ♀ *Dictyna saepei* Chamberlain and Ivie.

MIMETIDAE (61): 51 imm., 1 ♀ *Mimetus eutypus* Chamberlain and Ivie; 9 imm. *Mimetus* sp.

THERIDIIDAE (73): 2 imm. *Euryopis* sp.; 33 imm. *Latrodectus* sp.; 3 ♀ *Theridion michelbacheri* Levi; 35 imm. *Theridion* sp.

In my studies, *Trypoxylon tridentatum* preyed most heavily on spiders in the families Araneidae and Theridiidae, which together comprised 86–98% of the spiders from each locality. The same two families contained 98–100% of the prey at localities in North Carolina, Arizona, and Florida studied by Krombein (1967). The relative proportions of the two families varied from one locality to another here and in Krombein's study, but in general araneids were more abundant (59–83% of the prey). Exceptions were at Miller Canyon, where araneids represented 28% and theridiids 70% of the prey in a small sample, and the Hopland Field Station where prey included 37% araneids and 60% theridiids. These differences suggest to me that *T. tridentatum* maintains the same hunting behavior throughout its range but the relative abundances of prey species differ among localities during the season of wasp activity. *Trypoxylon tridentatum* typically take many genera of araneids and theridiids. Nevertheless, in a study conducted in southeastern Oregon in an area dominated by sagebrush (*Artemisia*) and rabbit-brush (*Chrysothamnus*) O'Brien (1982) found prey from 21 cells to consist exclusively of the araneid *Metepeira grandiosa*. I suspect that either *M. grandiosa* was especially abundant or other prey species were extremely scarce, but as noted by O'Brien conditioning of the wasps cannot be ruled out.

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